




[<< Back to Article](#)

Oz Bundling New Energy, Broadband

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SYDNEY, Australia -- Lower costs, green electricity and broadband communications, too.

Over the next four years, researchers in Western Australia will be outfitting remote Outback communities with wind and solar power, which will be remotely adjusted by satellite to maximize their renewable energy output and reduce the need for backup diesel generators. The spare capacity on the satellite uplink can also be used for other things, such as local broadband Internet access, telemedicine and education.

Solar and wind power have long been deployed in the Outback. So have various satellite communications technologies. And real-time remote monitoring and control is now commonplace for businesses that operate things like isolated oil wells. But so far, no one's bundled all three for isolated communities.

"We want to see how far we can push this technology down to the local level," said Frank Reid, managing director of the Australian Cooperative Research Centre for Renewable Energy, in Perth, Western Australia. "We want to find out how small a system we can cost-effectively control."

Telecommunications and energy providers have long been bedeviled by the high costs involved in serving small, isolated communities. High capital and fuel transport costs, ruinous maintenance expenses, and small local consumption profiles makes the economics daunting.

Virtually everywhere, such services are subsidized, putting the focus on cost reduction.

"Ultimately, we want to build a platform for shared services," says Reid, who believes the technology could work for communities as small as ten people.

Over the next four years, he'll oversee installation of various-sized solar panels, wind power generators, energy-storing batteries, and small VSAT satellite dishes in 240 remote Outback communities.

The system relies largely upon technology developed by Honeywell International for Perth oil and gas producer Amadeus Petroleum NL, which has deployed it to monitor its own maintenance and production needs at various hard-to-reach oil wells. The system relies on linking power and monitoring systems to a small VSAT satellite dish that in turn connects by satellite to a control room of Amadeus, either through a dedicated phone line or the Internet.

Amadeus Petroleum believes its central control room in Perth can, in addition to managing its dedicated installations like oil wells, monitor large numbers of small power-generating plants in small villages.

That's because none of these village-level power plants would require full-time watching. For instance, the control room might contact a village only when its electricity consumption rises on a particular day to where it could crash its finite local power supply.

Similarly, remote troubleshooting could assist scheduled maintenance visits to be more productive, allowing repairmen to show up with the right parts. This makes a difference when the parts depot is a long distance away.

Paul Budde, an independent telecommunications analyst in Sydney, is skeptical. He sees this project as an over-engineered Outback white elephant. Budde believes simplicity and reliability are more important to isolated settlements than fancy, multi-bundled solutions.

"No one is going to opt for solar power because they can save on telecommunications," Budde said. "The two transactions are different. Both at one time is too complicated."

Reid strenuously disagrees, saying Budde's analysis rests on the assumption that consumers in remote areas have a choice. In many small communities, service costs are so high that traditional consumer economics goes out the window, and that's why many small, isolated communities still don't have phone service or electrical power. While this may be an experiment, it's one that powerless, phoneless remote communities are unlikely to pass up.

Reid plans to begin installing the systems early next year. If the program is successful, he believes it could work well in remote areas of the developing world.